CLAIMS

What is claimed is:

1. A method of forming laterally segmented face electrodes for a flat panel display spacer comprising the steps of:

a) defining a length for said electrodes, wherein said length is effective for minimizing zero current shift;

b) fabricating said face electrodes of said length.

2. The method as recited in Claim 1, wherein said step a) further comprises the steps of:

a1) determining a value for change in zero current shift from fluctuation in resistance of said spacer;

a2) determining a value for change in zero current shift from misalignment;

a3) combining said value determined in said step a1) and said value determined in said step a2) into a total zero current shift value; and

a4) differentiating said root summed square of said total zero current value with respect to length to determine the length for minimum zero current shift variation.

3. The method as recited in Claim 1, wherein said step b) further comprises the steps of:

b1) forming a lift-off layer over a sheet of material constituting said spacer;

b2) masking said lift-off layer;

b3) removing a portion of said lift-off layer not masked;

b4) removing the mask;

b5) depositing an electrode layer over remaining material of the lift-off layer and over uncovered material of the sheet of spacer material; and

b6) removing the remaining material of the lift-off layer to remove overlying material of the electrode layer.

4. The method as recited in Claim 3, wherein said step b2) further comprises templating to form said electrode segments at said length defined.

5. The method as recited in Claim 4, wherein said step b6) further comprises exposing said electrodes of said length defined.

6. A method for achieving low zero current shift for flat panel displays having spacers with laterally segmented face electrodes of a plurality of segments, comprising the steps of:

a) determining a first component of said zero current shift resulting from a nonuniformity in resistivity of said spacers;

b) determining a second component of said zero current shift resulting from misalignment;

c) combining said first component and said second component into a total zero current shift value;

d) differentiating a derivative of said value with respect to length of said electrodes;

e) defining a length for said electrodes by setting said derivative to zero and solving for length; and

f) fabricating each segment of said electrodes accordingly.

7. The method as recited in Claim 6, wherein said first component comprises a first product, said first product formed by multiplying first multiplicands.

8. The method as recited in Claim 7, wherein said first multiplicands are:

a) a first beam sensitivity factor;

b) a value for said nonuniformity of resistivity; and

c) a square root of the reciprocal of the sum of the length of said spacer and a dimension over which the resistance would naturally average by current flow.

9. The method as recited in Claim 6, wherein said second component comprises a second product, said second product formed by multiplying second multiplicands.

10. The method as recited in Claim 9, wherein said second multiplicands are:

a) a second beam deflection sensitivity factor;

b) a measure of tolerance of dicing performed in fabricating said spacer; and

c) the length of said spacer.

11. A method for achieving low zero current shift for flat panel displays having spacers with laterally segmented face electrodes comprising the steps of:

a) determining a first component of said zero current shift resulting from fluctuations in the resistivity of said spacers;

b) determining a second component of said zero current shift resulting from misalignment;

c) combining said first component and said second component into a total zero current shift value;

d) taking a root summed square of said value;

e) differentiating a derivative of said value with respect to length of said electrodes;

f) defining a length for said electrodes, wherein said length is a length at which said derivative is zero; and

g) fabricating said electrodes accordingly.

12. A flat panel display comprising:

an electroemissive plate structure;

a fluorescent plate structure separated from said electroemissive plate structure by a space at vacuum; spacers bracing said electroemissive and said fluorescent plate structures and having a face;

and

a plurality of laterally segmented face electrodes arrayed upon said face, wherein each of said electrodes is individually accessible.

13. The method as recited in Claim 12, wherein said electrodes may individually be subjected to electrical testing.

14. A method comprising the steps of:

forming a spacer to comprise a main spacer portion and a face electrode which overlies a face of the main spacer portion and is segmented into a plurality of electrode segments (a) spaced apart from opposite first and second ends of the spacer, (b) spaced apart from one another as viewed generally perpendicular to either of the first and second ends of the spacer, and (c) of a length effective to minimize zero current shift, the forming step comprising:

depositing an electrode layer over a sheet of spacer material; and

selectively removing part of the electrode layer to largely form the electrode segments from the remainder of the electrode material; and

inserting the spacer between a first plate structure and a second plate structure of a flat-panel display such that the first and second ends of the spacer respectively contact the first and second plate structures, an image being provided on the second plate structure during display operation.

15. A method as in Claim 14 wherein the second plate structure emits light to produce the image in response to electrons emitted from the first plate structure.

16. A method as in Claim 14 further including the step of cutting the sheet of spacer material to form the main spacer portion.

17. A method as in Claim 14 wherein the removing step entails using a mask to control where the part of the electrode layer is selectively removed, the remaining electrode segment of a length effective to minimize zero current shift.

18. A method as in Claim 17 wherein the removing step comprises:

masking over the electrode layer to template an electrode of a length effective to minimize zero current shift; and

removing material of the electrode layer not covered by the mask to form an electrode of a length effective to minimize zero current shift.

19. A method as in Claim 17 wherein the removing and depositing steps comprise:

forming a lift-off layer over the sheets of spacer material;

masking over the lift-off layer;

removing material of the lift-off layer not covered by the mask;

removing the mask;

depositing the electrode layer over remaining material of the lift-off layer and over uncovered material of the sheet of spacer material; and

removing the remaining material of the lift-off layer to remove overlying material of the electrode layer to leave an electrode of a length effective to minimize zero current shift.